REMARKS

Applicants reply to the Office Action dated December 9, 2009, with a three month extension of time. Claims 1-14, 16-39, 42-48 and 50 are pending, but claims 6, 7, 16-39, 42-48 and 50 have been withdrawn from consideration. Applicants add new independent claims 51 and 52. Support for the amendments may be found in the originally-filed specification, claims, and figures. No new matter is entered with these amendments.

Applicants thank the Examiner for the indication of allowable subject matter in claims 9 and 10.

The Examiner rejects claims 1-5, 8 and 11-14 under 35 USC 103(a) as being unpatentable over Haynes (US Reissue 36,130) in view of Karlsson (US Patent No. 4,041,379) and Berner et al (US Patent No. 3,913,388). Applicants respectfully disagree with these rejections, but Applicants submit claim amendments to expedite prosecution and to clarify the patentable subject matter.

While both the claimed invention and Haynes generally include ultrasonic testing of pipe surfaces, Applicants assert that Haynes is limited to a device for ultrasonically gauging the thickness of a pipe and for testing for sub-surface defects. The Haynes device is arranged to rotate in a transverse direction around the pipe to transcribe a spiral along its length. The Haynes device is capable of retracing its circumferential path, depending on how the pipe is manipulated. Measurement in Haynes is conducted by generating a compression wave and receiving a distinct back wall echo.

In contrast, Applicants assert that the claimed invention is primarily (although not solely) concerned with locating weld seam discontinuities in pipes. To achieve its objectives, the claimed invention employs shear wave transducers, and as such, measurements are prone to spurious surface wave propagation. Applicants assert that Haynes is entirely silent on addressing the problem of damping spurious surface waves because it is not an issue for the testing regime performed by the Haynes' device.

Similarly, it must be appreciated that weld seam discontinuities may be present at any point located at the ends of, or along the length of the pipe. Accordingly, Applicants assert that

the device of the claimed invention is adapted to be moved longitudinally relative to the pipe from the extremity at each end of the pipe and along the entire pipe length to locate such defects. The claimed invention is provided with a guide surface that is adapted to engage and traverse hindrances in the pipe located at the ends of (or along) the pipe, in response to relative longitudinal movement of the pipe to the device (see page 2, lines 2537).

In this latter respect, Haynes is entirely silent, as the Examiner correctly concedes. Moreover, Applicants assert that neither Karlsson nor Berner et al teach a guide surface that is adapted to engage and traverse hindrances in the pipe located at the ends of the pipe when the device is moved longitudinally relative to the pipe.

More specifically, Karlsson describes a device that carries one or more probes across the surface of a block metal (e.g. slab billet and so forth). Applicants assert that no reference to a pipe surface exists in Karlsson. Further, Applicants assert that Karlsson does not address the problem of engaging the probes at the extremities (i.e. the edges) of such planar surfaces. Karlsson also does not address the issue of damping spurious surface waves, as it is concerned with detection of subsurface defects, presumably using a compression wave. Spurious surface waves would not interfere with such measurements.

Berner et al describes a device that also carries a group of probes across the surface of a sheet. Applicants assert that Berner is silent with regard to the use of the device relative to a pipe surface and it does not address the problem of engaging the probes at the extremities of the sheet surface. The probe holders move in a sinusoidal motion along the sheet, which contrasts with (and teaches away from) the claimed invention which moves the device longitudinally relative to the pipe. Additionally, Berner et al has no need to address the issue of damping spurious surface waves because it is concerned with locating subsurface defects, and spurious surface waves would not interfere with such measurements.

In contrast, Applicants assert that the guide surface of the claimed invention is adapted to engage and traverse hindrances located at the ends of (i.e. the extremities) and along the length of the pipe. Further, Applicants assert that the claimed invention is adapted to dampen spurious surface waves which would interfere with the defect testing regime of the device. The problem of damping spurious surface waves is addressed by disposing a transducer locator element within

the transducer locating portion and mounting the transducer within the element. The transducer locator element laterally surrounds the transducer and is formed from a material which is resistant to the propagation of ultrasonic waves therethrough, thereby shielding the transducer from such spurious surface waves which may travel laterally through the device.

Nonetheless, to further distinguish the claimed invention from the cited references, Applicant amends claim 1 to refer to the ability of the guide surface to engage the extremity of the pipe surface. Support for the amendments is specifically found on, for example, page 2, lines 25-37.

Previously, such similar ultrasonic testing was only available along the length of the pipe and extending at most 6-8 cm, from the extreme ends of the pipe. Measurement and testing at the ends of the pipe were avoided because of likely trauma caused to the sensitive transducers by hindrances located at the ends of the pipe.

The claimed invention is capable of engaging and traversing such hindrances from the extremities of the pipe without damage to the transducers. Such a development is an enormous improvement over the prior art. Each cited reference is silent on testing and measurement of its respective surface at its extremity. In other words, there is no discussion with regard to how the guide surfaces of these devices are adapted to engage and traverse the edges of said surfaces. The cited references describe how the devices are lowered onto the surfaces, but not how they engage and then traverse the edges of such surfaces.

As such, Applicants assert that the cited references, alone or in combination, do not disclose or contemplate at least "when the device is moved longitudinally relative to the pipe, the guide surface can engage and traverse hindrances in the pipe located at the ends of, or along the pipe, to such relative device movement," as recited in independent claim 1, and as similarly recited in independent claims 51 and 52.

Claim 51 includes similar features of claims 1, 8 and 9, and claim 52 includes similar features of claims 1, 8 and 10. The Examiner indicates that claims 9 and 10 would be allowable if rewritten in independent form.

Dependent claims 2-5 and 8-14 variously depend from independent claim 1, so Applicants assert that dependent claims 2-5 and 8-14 are differentiated from the cited references for the same reasons as set forth above, in addition to their own respective features.

Applicants respectfully submit that the pending claims are in condition for allowance. The Commissioner is hereby authorized to charge any fees which may be required, or credit any overpayment, to Deposit Account No. **19-2814**. Applicants invite the Examiner to telephone the undersigned, if the Examiner has any questions regarding this Reply or the present application in general.

Respectfully submitted,

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